Do-it-yourself service precautions

If you perform maintenance by yourself, be sure to follow the correct procedure as given in these sections.

Items	Parts and tools
12-volt battery condition (→P. 511)	• Grease • Conventional wrench (for terminal clamp bolts)
Brake fluid level (→P. 508)	• FMVSS No.116 DOT 3 or SAE J1703 brake fluid • Rag or paper towel • Funnel (used only for adding brake fluid)

Items	Parts and tools
Engine/power control unit coolant level (→P. 504)	• “Toyota Super Long Life Coolant” or a similar high quality ethylene glycol-based non-silicate, non-amine, non-nitrite and non-borate coolant with long-life hybrid organic acid technology For the U.S.A.: “Toyota Super Long Life Coolant” is pre-mixed with 50% coolant and 50% deionized water. For Canada: “Toyota Super Long Life Coolant” is pre-mixed with 55% coolant and 45% deionized water. • Funnel (used only for adding coolant)

Items	Parts and tools
Engine oil level (→P. 500)	• "Toyota Genuine Motor Oil" or equivalent • Rag or paper towel • Funnel (used only for adding engine oil)
Fuses (→P. 542)	• Fuse with same amperage rating as original
Light bulbs (→P. 554)	• Bulb with same number and wattage rating as original • Phillips-head screwdriver • Flathead screwdriver • Wrench
Radiator and condenser (→P. 507)	—
Tire inflation pressure (→P. 530)	• Tire pressure gauge • Compressed air source
Washer fluid (→P. 510)	• Water or washer fluid containing antifreeze (for winter use) • Funnel (used only for adding water or washer fluid)

CAUTION

The engine compartment contains many mechanisms and fluids that may move suddenly, become hot, or become electrically energized. To avoid death or serious injury, observe the following precautions.

When working on the engine compartment

- Make sure that the indicator on the "POWER" switch and the "READY" indicator are both off.
- Keep hands, clothing and tools away from the moving fan and engine drive belt.
- Be careful not to touch the engine, power control unit, radiator, exhaust manifold, etc. right after driving as they may be hot. Oil and other fluids may also be hot.
- Do not leave anything that may burn easily, such as paper and rags, in the engine compartment.
- Do not smoke, cause sparks or expose an open flame to fuel. Fuel fumes are flammable.

When working near the electric cooling fans or radiator grille

Be sure the "POWER" switch is off.
With the "POWER" switch in ON mode, the electric cooling fans may automatically start to run if the air conditioning is on and/or the coolant temperature is high. (→P. 507)

Safety glasses

Wear safety glasses to prevent flying or falling material, fluid spray, etc. from getting in your eyes.

NOTICE

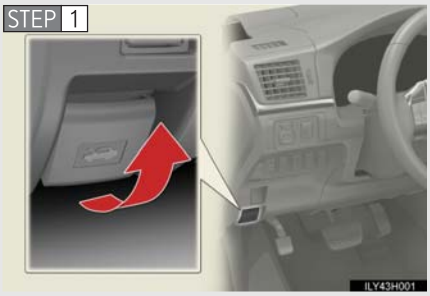
n **If you remove the air cleaner filter**

Driving with the air cleaner filter removed may cause excessive engine wear due to dirt in the air. Also, a backfire could cause a fire in the engine compartment.

Hood

Release the lock from the inside of the vehicle to open the hood.

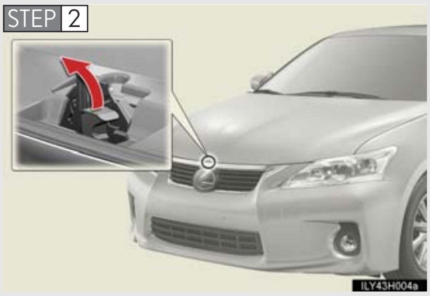
STEP 1



Pull the hood release lever.

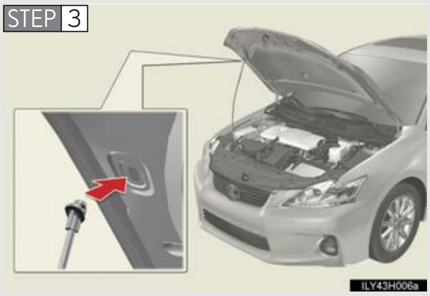
The hood will pop up slightly.

STEP 2



Pull up the auxiliary catch lever and lift the hood.

STEP 3



Hold the hood open by inserting the supporting rod into the slot.

CAUTION

■ **Pre-driving check**

Check that the hood is fully closed and locked.
If the hood is not locked properly, it may open while the vehicle is in motion and cause an accident, which may result in death or serious injury.

■ **After installing the support rod into the slot**

Make sure the rod supports the hood securely from falling down on to your head or body.

NOTICE

■ **When closing the hood**

Be sure to return the support rod to its clip before closing the hood. Closing the hood without returning the support rod properly could cause the hood to bend.

Positioning a floor jack

When raising your vehicle with a floor jack, position the jack correctly. Improper placement may damage your vehicle or cause injury.

Front



Rear



⚠ CAUTION

■ **When raising your vehicle**

Make sure to observe the following precautions to reduce the possibility of death or serious injury:



- Lift up the vehicle using a floor jack such as the one shown in the illustration.
- When using a floor jack, follow the instructions of the manual provided with the jack.
- Do not use the jack that was supplied with your vehicle.
- Do not put any part of your body underneath the vehicle when it is supported only by the floor jack.
- Always use floor jack and/or automotive jack stands on a solid, flat, level surface.
- Do not start the hybrid system while the vehicle is supported by the floor jack.
- Stop the vehicle on level, firm ground, firmly set the parking brake and shift the shift position to P.
- Make sure to set the floor jack properly at the jack point.
  Raising the vehicle with an improperly positioned floor jack will damage the vehicle and may cause the vehicle to fall off the floor jack.
- Do not raise the vehicle while someone is in the vehicle.
- When raising the vehicle, do not place any object on top of or underneath the floor jack.

Engine compartment



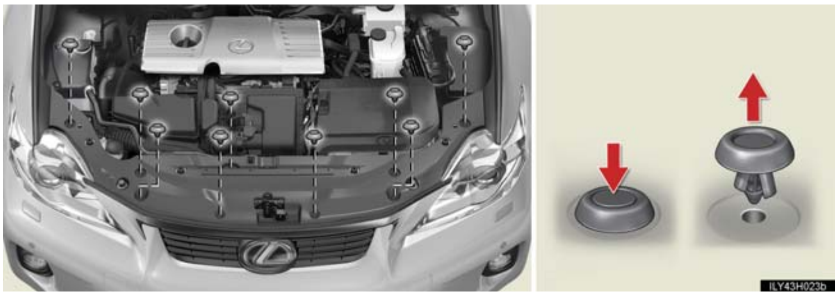
1. Engine coolant reservoir (→P. 504)
2. Engine oil level dipstick (→P. 500)
3. Engine oil filler cap (→P. 500)
4. Power control unit coolant reservoir (→P. 504)
5. Brake fluid reservoir (→P. 508)
6. Fuse box (→P. 542)
7. Radiator (→P. 507)
8. Condenser (→P. 507)
9. Electric cooling fans
10. Washer fluid tank (→P. 510)

12-volt battery

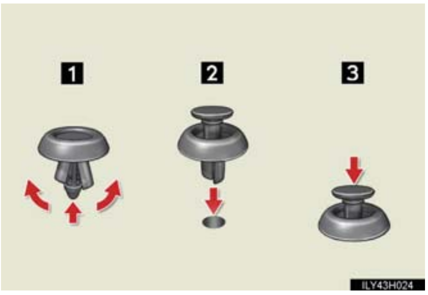
→P. 511

Engine compartment cover

n Removing the engine compartment cover



n Installing the clips



1 Push up center portion
2 Insert
3 Press

⚠ NOTICE

n After installing an engine compartment cover

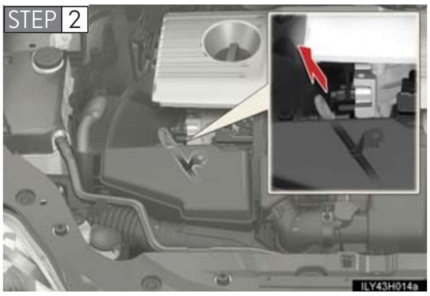
Make sure that the cover is securely installed in its original position.

Engine oil

With the engine at operating temperature and turned off, check the oil level on the dipstick.

n Checking the engine oil

STEP 1 Park the vehicle on level ground. After turning off the hybrid system, wait more than 5 minutes for the oil to drain back into the bottom of the engine.

STEP 2


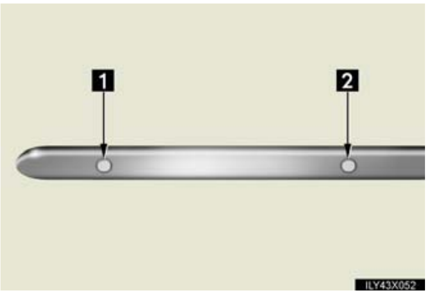
Holding a rag under the end, pull the dipstick out.

STEP 3 Wipe the dipstick clean.

STEP 4 Reinsert the dipstick fully.

STEP 5 Holding a rag under the end, pull the dipstick out and check the oil level.

STEP 6 Wipe the dipstick and reinsert it fully.



1 Low

2 Full

n Adding engine oil



If the oil level is below or near the low level mark, add engine oil of the same type as that already in the engine.

Make sure to check the oil type and prepare the items needed before adding oil.

Engine oil selection	→P. 654
Oil quantity (Low → Full)	1.6 qt. (1.5 L, 1.3 Imp.qt.)
Items	Clean funnel

STEP 1 Remove the oil filler cap by turning it counterclockwise.

STEP 2 Add engine oil slowly, checking the dipstick.

STEP 3 Install the oil filler cap by turning it clockwise.

- **Engine oil consumption**
  - The amount of engine oil consumed depends on the oil viscosity, the quality of the oil and the way the vehicle is driven.
  - More oil is consumed under driving conditions such as high speeds and frequent acceleration and deceleration.
  - A new engine consumes more oil.
  - When judging the amount of oil consumption, keep in mind that the oil may have become diluted, making it difficult to judge the true level accurately.
  - Oil consumption: Max. 1.1 qt./600 miles (1.0 L/1000 km, 0.9 Imp.qt./600 miles)
  - If your vehicle consumes more than 1.1 qt. (1.0 L, 0.9 Imp.qt.) every 600 miles (1000 km), contact your Lexus dealer.
- **After changing the engine oil (U.S.A. only)**

The engine oil maintenance data should be reset. Perform the following procedures:

STEP 1 Switch the display to the trip meter "A" (→P. 188) when the hybrid system is operating.

STEP 2 Turn the "POWER" switch off.

STEP 3 While pressing the trip meter reset button (→P. 188), turn the "POWER" switch to ON mode (do not start the hybrid system because otherwise the reset mode will be canceled). Continue to press and hold the button until the trip meter displays "000000" and the multi-information display indicates that the reset is complete.

CAUTION

Used engine oil

- Used engine oil contains potentially harmful contaminants which may cause skin disorders such as inflammation and skin cancer, so care should be taken to avoid prolonged and repeated contact. To remove used engine oil from your skin, wash thoroughly with soap and water.
- Dispose of used oil and filters only in a safe and acceptable manner. Do not dispose of used oil and filters in household trash, in sewers or onto the ground. Call your Lexus dealer, service station or auto parts store for information concerning recycling or disposal.
- Do not leave used engine oil within the reach of children.

NOTICE

To prevent serious engine damage

Check the oil level on a regular basis.

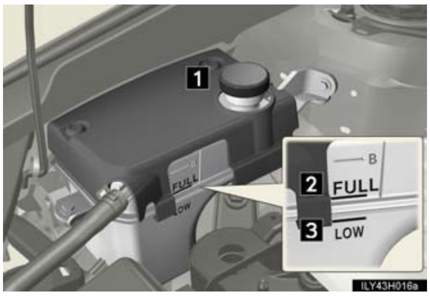
When replacing the engine oil

- Be careful not to spill engine oil on the vehicle components.
- Avoid overfilling, or the engine could be damaged.
- Check the oil level on the dipstick every time you refill the vehicle.
- Be sure the engine oil filler cap is properly tightened.

Coolant

The coolant level is satisfactory if it is between the “FULL” and “LOW” lines on the reservoir when the hybrid system is cold.

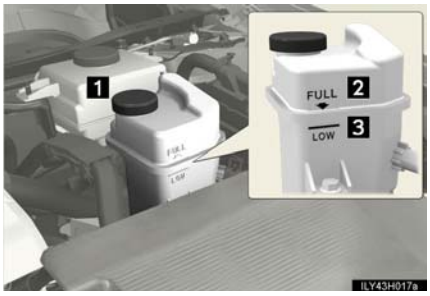
Engine coolant reservoir



1 Reservoir cap
2 “FULL” line
3 “LOW” line

If the level is on or below the “LOW” line, add coolant up to the “FULL” line. (→P. 657)

Power control unit coolant reservoir



1 Reservoir cap
2 “FULL” line
3 “LOW” line

If the level is on or below the “LOW” line, add coolant up to the “FULL” line. (→P. 657)

■ **Coolant selection**

Only use "Toyota Super Long Life Coolant" or a similar high quality ethylene glycol based non-silicate, non-amine, non-nitrite, and non-borate coolant with long-life hybrid organic acid technology.

U.S.A.: "Toyota Super Long Life Coolant" is a mixture of 50% coolant and 50% deionized water. (Minimum temperature: -31 °F [-35 °C])

Canada: "Toyota Super Long Life Coolant" is a mixture of 55% coolant and 45% deionized water. (Minimum temperature: -44 °F [-42 °C])

For more details about coolant, contact your Lexus dealer.

■ **If the coolant level drops within a short time of replenishing**

Visually check the radiator, hoses, engine/power control unit coolant reservoir caps, drain cock and water pump.
If you cannot find a leak, have your Lexus dealer test the cap and check for leaks in the cooling system.

CAUTION

■ **When the hybrid system is hot**

Do not remove the engine/power control unit coolant reservoir caps.
The cooling system may be under pressure and may spray hot coolant if the cap is removed, causing burns or other injuries.

NOTICE

■ **When adding coolant**

Coolant is neither plain water nor straight antifreeze. The correct mixture of water and antifreeze must be used to provide proper lubrication, corrosion protection and cooling. Be sure to read the antifreeze or coolant label.

■ **If you spill coolant**

Be sure to wash it off with water to prevent it from damaging parts or paint.

Radiator and condenser

Check the radiator and condenser and clear away any foreign objects.
If either of the above parts is extremely dirty or you are not sure of their condition, have your vehicle inspected by your Lexus dealer.

CAUTION

- **When the hybrid system is hot**

Do not touch the radiator or condenser as they may be hot and cause burns.

- **When the electric cooling fans are operating**

Do not touch the engine compartment.
The electric cooling fans may keep rotating for about 3 minutes even after the "POWER" switch is off.
With the "POWER" switch in ON mode, the electric cooling fans may automatically start to run if the air conditioning is on and/or the coolant temperature is high. Be sure the "POWER" switch is off when working near the electric cooling fans or radiator grille.

Brake fluid

■ Checking fluid level



The brake fluid level should be between the “MAX” and “MIN” lines on the tank.

■ Adding fluid

Make sure to check the fluid type and prepare the necessary item.

Fluid type	FMVSS No.116 DOT 3 or SAE J1703 brake fluid
Items	Clean funnel

■ Brake fluid can absorb moisture from the air

Excess moisture in the brake fluid can cause a dangerous loss of braking efficiency. Use only newly opened brake fluid.

CAUTION

■ **When filling the reservoir**

Take care as brake fluid can harm your hands and eyes and damage painted surfaces.
If fluid gets on your hands or in your eyes, flush the affected area with clean water immediately.

If you still experience discomfort, see a doctor.

NOTICE

■ **If the fluid level is low or high**

It is normal for the brake fluid level to go down slightly as the brake pads wear out or when the fluid level in the accumulator is high.
If the reservoir needs frequent refilling, there may be a serious problem.

Washer fluid



If any washer does not work or the warning message appears on the multi-information display, the washer tank may be empty. Add washer fluid.

CAUTION

- **When adding washer fluid**

  Do not add washer fluid when the hybrid system is hot or operating as washer fluid contains alcohol and may catch fire if spilled on the engine etc.

NOTICE

- **Do not use any fluid other than washer fluid**

  Do not use soapy water or engine antifreeze instead of washer fluid.
  Doing so may cause streaking on the vehicle's painted surfaces.

- **Diluting washer fluid**

  Dilute washer fluid with water as necessary.
  Refer to the freezing temperatures listed on the washer fluid tank.

12-volt battery

■ Location



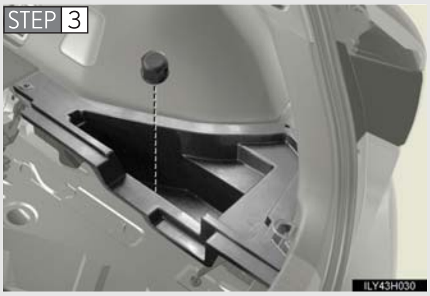
The 12-volt battery is located in the right-hand side of luggage compartment.

■ Removing the 12-volt battery cover

STEP 1 Open the center and right side auxiliary boxes. (→P. 447)

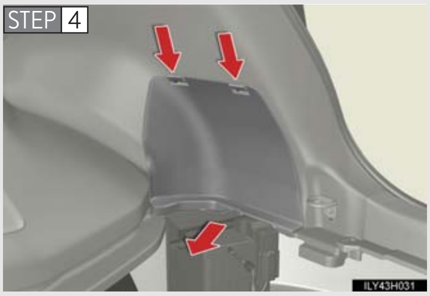
STEP 2 Remove the center auxiliary box. (→P. 616)

STEP 3



Remove the right side auxiliary box.

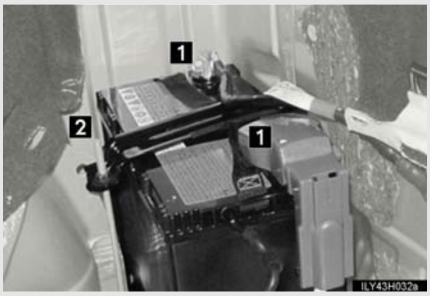
STEP 4



Remove the 12-volt battery maintenance cover.

n **Exterior**

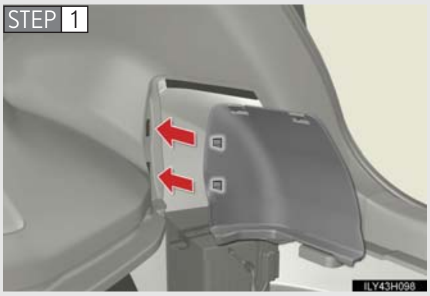
Make sure that the 12-volt battery terminals are not corroded and that there are no loose connections, cracks, or loose clamps.



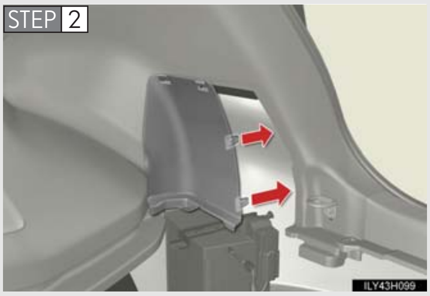
1 Terminals

2 Hold-down clamp

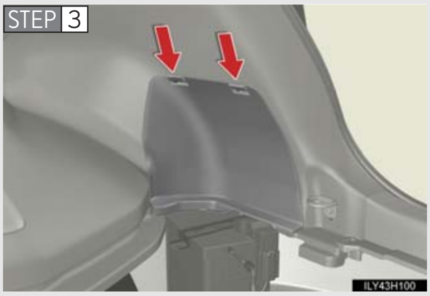
■ **Installing the 12-volt battery maintenance cover**



Insert the 2 tabs on the far side of the cover into the holes.



Hook on the 2 tabs on the near side of the cover.



Hook on the 2 tabs on the upper side of the cover.

- **Before recharging**

When recharging, the 12-volt battery produces hydrogen gas which is flammable and explosive. Therefore, observe the following precautions before recharging:

- If recharging with the 12-volt battery installed on the vehicle, be sure to disconnect the ground cable.
- Make sure the power switch on the charger is off when connecting and disconnecting the charger cables to the 12-volt battery.

- **After recharging/reconnecting the 12-volt battery**

- Unlocking the doors using the smart access system with push-button start may not be possible immediately after reconnecting the 12-volt battery. If this happens, use the wireless remote control or the mechanical key to lock/unlock the doors.
- Start the hybrid system with the “POWER” switch in ACCESSORY mode. The hybrid system may not start with the “POWER” switch turned OFF. However, the hybrid system will operate normally from the second attempt.
- The “POWER” switch mode is recorded by the vehicle. If the battery is reconnected, the vehicle will return the “POWER” switch mode to the status it was in before the battery was disconnected. Make sure to turn off the power before disconnect the battery. Take extra care when connecting the battery if the “POWER” switch mode prior to discharge is unknown.
- Restart the hybrid system, depress the brake pedal, and confirm that it is possible to shift into each shift position.

If the system will not start even after multiple attempts at all methods above, contact your Lexus dealer.

CAUTION

■ **Chemicals in the 12-volt battery**

The 12-volt battery contains poisonous and corrosive sulfuric acid and may produce hydrogen gas which is flammable and explosive. To reduce the risk of death or serious injury, take the following precautions while working on or near the 12-volt battery:

- Do not cause sparks by touching the 12-volt battery terminals with tools.
- Do not smoke or light a match near the 12-volt battery.
- Avoid contact with eyes, skin and clothes.
- Never inhale or swallow electrolyte.
- Wear protective safety glasses when working near the 12-volt battery.
- Keep children away from the 12-volt battery.

■ **Where to safely charge the 12-volt battery**

Always charge the 12-volt battery in an open area. Do not charge the 12-volt battery in a garage or closed room where there is insufficient ventilation.

■ **How to recharge the 12-volt battery**

Only perform a slow charge (4.2 A or less). The 12-volt battery may explode if charged at a quicker rate.

CAUTION

- **Emergency measures regarding electrolyte**
  - If electrolyte gets in your eyes
    Flush your eyes with clean water for at least 15 minutes and get immediate medical attention. If possible, continue to apply water with a sponge or cloth while traveling to the nearest medical facility.
  - If electrolyte gets on your skin
    Wash the affected area thoroughly. If you feel pain or burning, get medical attention immediately.
  - If electrolyte gets on your clothes
    It can soak through clothing on to your skin. Immediately take off the clothing and follow the procedure above if necessary.
  - If you accidentally swallow electrolyte
    Drink a large quantity of water or milk. Follow with milk of magnesia, beaten raw egg or vegetable oil. Get emergency medical attention immediately.
- **When replacing the 12-volt battery**

  Use a 12-volt battery designed for this vehicle. Failure to do so may cause gas (hydrogen) to enter the passenger compartment, causing a fire or explosion.

  For replacement of the 12-volt battery, contact your Lexus dealer.

CAUTION

■ **When disconnecting the 12-volt battery**



Do not disconnect the negative (-) terminal on the body side as shown. The disconnected negative (-) terminal may touch the positive (+) terminal, which may cause a short and result in death or serious injury.

NOTICE

■ **When recharging the 12-volt battery**

Never recharge the 12-volt battery while the hybrid system is operating. Also, be sure all accessories are turned off.

Tires

Replace or rotate tires in accordance with maintenance schedules and treadwear.

Checking tires

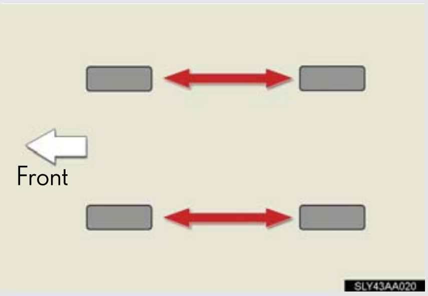


1. New tread
2. Treadwear indicator
3. Worn tread

The location of treadwear indicators is shown by the "TWI" or "Δ" marks, etc., molded on the sidewall of each tire.

Check spare tire condition and pressure if not rotated.

Tire rotation



Rotate the tires in the order shown.

To equalize tire wear and extend tire life, Lexus recommends that tire rotation is carried out at the same interval as tire inspection.

Do not fail to initialize the tire pressure warning system after tire rotation.

■ **Tire pressure warning system**

Your vehicle is equipped with a tire pressure warning system that uses tire pressure warning valves and transmitters to detect low tire inflation pressure before serious problems arise.
(→P. 585)

The compact spare tire is not equipped with a tire pressure warning valve and transmitter.

Installing tire pressure warning valves and transmitters

When replacing tires or wheels, tire pressure warning valves and transmitters must also be installed.

When new tire pressure warning valves and transmitters are installed, new ID codes must be registered in the tire pressure warning computer and the tire pressure warning system must be initialized. Have tire pressure warning valve and transmitter ID codes registered by your Lexus dealer. (→P. 522)

Initializing the tire pressure warning system

The tire pressure warning system must be initialized in the following circumstances:

- Vehicles with 17 inch tires: When rotating front and rear tires which have different tire inflation pressures
- When changing the tire size

When the tire pressure warning system is initialized, the current tire inflation pressure is set as the benchmark pressure.

n How to initialize the tire pressure warning system

STEP 1 Park the vehicle in a safe place and turn the “POWER” switch off.

Initialization cannot be performed while the vehicle is moving.

STEP 2 Adjust the tire inflation pressure to the specified cold tire inflation pressure level. (→P. 661)

Make sure to adjust the tire pressure to the specified cold tire inflation pressure level. The tire pressure warning system will operate based on this pressure level.

STEP 3 Turn the “POWER” switch to ON mode.

STEP 4



Press and hold the tire pressure warning reset button until the tire pressure warning light flashes slowly 3 times.

STEP 5 Wait for a few minutes with the “POWER” switch in ON mode and then turn the “POWER” switch off.

Registering ID codes

The tire pressure warning valve and transmitter is equipped with a unique ID code. When replacing a tire pressure warning valve and transmitter, it is necessary to register the ID code. Have the ID code registered by your Lexus dealer.

When to replace your vehicle's tires

Tires should be replaced if:

- You have tire damage such as cuts, splits, cracks deep enough to expose the fabric, and bulges indicating internal damage.
- A tire goes flat repeatedly or cannot be properly repaired due to the size or location of a cut or other damage.

If you are not sure, consult with your Lexus dealer.

Replacing tires and wheels

If the ID code of the tire pressure warning valve and transmitter is not registered, the tire pressure warning system will not work properly. After driving for about 20 minutes, the tire pressure warning light flashes for 1 minute and stays on to indicate a system malfunction.

Tire life

Any tire over 6 years old must be checked by a qualified technician even if it has seldom or never been used or damage is not obvious.

■ **Routine tire inflation pressure checks**

The tire pressure warning system does not replace routine tire inflation pressure checks. Make sure to check tire inflation pressure as part of your routine of daily vehicle checks.

■ **Low profile tires (vehicles with 17 inch tires)**

Generally, low profile tires will wear more rapidly and tire grip performance will be reduced on snowy and/or icy roads when compared to standard tires. Be sure to use snow tires or tire chains on snowy and/or icy roads and drive carefully at a speed appropriate for road and weather conditions.

■ **Maximum load of tire**

Check that the maximum load of the replacement tire is greater than 1/2 of the Gross Axle Weight Ratings (GAWR) of either the front axle or the rear axle, whichever is greater.



For the GAWR, see the Certification Label. For the maximum load of the tire, see the load limit at maximum cold tire inflation pressure mentioned on the sidewall of the tire. (→P. 668)

Tire types

- Summer tires

  Summer tires are high-speed performance tires best suited to highway driving under dry conditions. Since summer tires do not have the same traction performance as snow tires, summer tires are inadequate for driving on snow-covered or icy roads. For driving on snow-covered roads or icy roads, the use of snow tires is recommended. When installing snow tires, be sure to replace all four tires.

- All season tires

  All season tires are designed to provide better traction in snow and to be adequate for driving in most winter conditions as well as for use year-round. All season tires, however, do not have adequate traction performance compared with snow tires in heavy or loose snow. Also, all season tires fall short in acceleration and handling performance compared with summer tires in highway driving.

- Snow tires

  For driving on snow-covered roads or icy roads, we recommend using snow tires. If you need snow tires, select tires of the same size, construction and load capacity as the originally installed tires. Since your vehicle has radial tires as original equipment, make sure your snow tires also have radial construction. Do not install studded tires without first checking local regulations for possible restrictions. Snow tires should be installed on all wheels. (→P. 270)

n **Initializing the tire pressure warning system**

Initialize the system with the tire inflation pressure adjusted to the specified level.

n **If the tread on snow tires wears down below 0.16 in. (4 mm)**

The effectiveness of the tires as snow tires is lost.

n **If you press the tire pressure warning reset button accidentally**

If initialization is performed, adjust the tire inflation pressure to the specified level and initialize the tire pressure warning system again.

n **When initialization of the tire pressure warning system has failed**

Initialization can be completed in a few minutes. However, in the following cases, the settings have not been recorded and the system will not operate properly. If repeated attempts to record tire inflation pressure settings are unsuccessful, have the vehicle inspected by your Lexus dealer.

l When operating the tire pressure warning reset button, the tire pressure warning light does not flash 3 times.

l After carrying out the initialization procedure, the tire pressure warning light flashes for 1 minute then stays on after driving for 20 minutes.

■ **Tire pressure warning system certification**

For vehicles sold in the U.S.A.
MODEL/FCC IDs:

Transmitter: PAXPMV107J

Receiver: HYQ13BDE

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC WARNING:
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For vehicles sold in Canada
Operation is subject to the following two conditions; (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

CAUTION

When inspecting or replacing tires

Observe the following precautions to prevent accidents.
Failure to do so may cause damage to parts of the drive train as well as dangerous handling characteristics, which may lead to an accident resulting in death or serious injury.

- Do not mix tires of different makes, models or tread patterns.
  Also, do not mix tires of remarkably different treadwear.
- Do not use tire sizes other than those recommended by Lexus.
- Do not mix differently constructed tires (radial, bias-belted or bias-ply tires).
- Do not mix summer, all season and snow tires.
- Do not use tires that have been used on another vehicle.
  Do not use tires if you do not know how they were used previously.

When initializing the tire pressure warning system

Do not operate the tire pressure warning reset button without first adjusting the tire inflation pressure to the specified level. Otherwise, the tire pressure warning light may not come on even if the tire inflation pressure is low, or it may come on when the tire inflation pressure is actually normal.

NOTICE

- **Repairing or replacing tires, wheels, tire pressure warning valves, transmitters and tire valve caps**
  - When removing or fitting the wheels, tires or the tire pressure warning valves and transmitters, contact your Lexus dealer as the tire pressure warning valves and transmitters may be damaged if not handled correctly.
  - When replacing tire valve caps, do not use tire valve caps other than those specified. The cap may become stuck.
- **To avoid damage to the tire pressure warning valves and transmitters**

  When a tire is repaired with liquid sealants, the tire pressure warning valve and transmitter may not operate properly. If a liquid sealant is used, contact your Lexus dealer or other qualified service shop as soon as possible. Make sure to replace the tire pressure warning valve and transmitter when replacing the tire. (→P. 520)
- **Driving on rough roads**

  Take particular care when driving on roads with loose surfaces or potholes.
  These conditions may cause losses in tire inflation pressure, reducing the cushioning ability of the tires. In addition, driving on rough roads may cause damage to the tires themselves, as well as the vehicle's wheels and body.

NOTICE

■ **Low profile tires (vehicles with 17 inch tires)**

Low profile tires may cause greater damage than usual to the tire wheel when sustaining impact from the road surface. Therefore, pay attention to the following:

- Be sure to use proper tire inflation pressure. If tires are under-inflated, they may be damaged more severely.
- Avoid potholes, uneven pavement, curbs and other road hazards. Failure to do so may lead to severe tire and wheel damage.

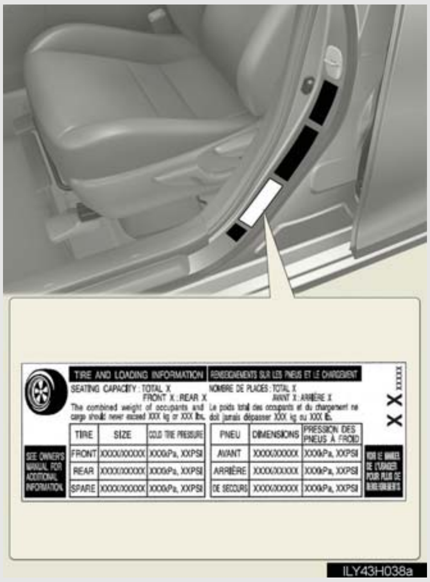
■ **If tire inflation pressure of each tire becomes low while driving**

Do not continue driving, or your tires and/or wheels may be ruined.

Tire inflation pressure

Tire inflation pressure

The recommended cold tire inflation pressure and tire size are displayed on the tire and loading information label. (→P. 661)



Inspection and adjustment procedure



1 Tire valve
2 Tire pressure gauge

STEP 1 Remove the tire valve cap.

STEP 2 Press the tip of the tire pressure gauge onto the tire valve.

STEP 3 Read the pressure using the gauge gradations.

STEP 4 If the tire inflation pressure is not at the recommended level, adjust the pressure.
If you add too much air, press the center of the valve to deflate.

STEP 5 After completing the tire inflation pressure measurement and adjustment, apply soapy water to the valve and check for leakage.

STEP 6 Put the tire valve cap back on.

Tire inflation pressure check interval

You should check tire inflation pressure every two weeks, or at least once a month. Do not forget to check the spare.

Effects of incorrect tire inflation pressure

Driving with incorrect tire inflation pressure may result in the following:

- Reduced fuel efficiency
- Reduced driving comfort and tire life
- Reduced safety
- Damage to the drive train

If a tire needs frequent inflating, have it checked by your Lexus dealer.

Instructions for checking tire inflation pressure

When checking tire inflation pressure, observe the following:

- Check only when the tires are cold.
  If your vehicle has been parked for at least 3 hours or has not been driven for more than 1 mile or 1.5 km, you will get an accurate cold tire inflation pressure reading.
- Always use a tire pressure gauge.
  The appearance of the tire can be misleading. In addition, tire inflation pressure that is even just a few pounds off can affect ride quality and handling.
- Do not reduce tire inflation pressure after driving. It is normal for tire inflation pressure to be higher after driving.
- Never exceed the vehicle capacity weight.
  Passengers and luggage weight should be placed so that the vehicle is balanced.

CAUTION

■ **Proper inflation is critical to save tire performance**

Keep your tires properly inflated. Otherwise, the following conditions may occur and result in an accident causing death or serious injury:

- Excessive wear
- Uneven wear
- Poor handling
- Possibility of blowouts resulting from overheated tires
- Poor sealing of the tire bead
- Wheel deformation and/or tire separation
- A greater possibility of tire damage from road hazards

NOTICE

■ **When inspecting and adjusting tire inflation pressure**

Be sure to put the tire valve caps back on.
Without the valve caps, dirt or moisture could get into the valve and cause air leakage, which could result in an accident. If the caps are lost, replace them as soon as possible.

Wheels

If a wheel is bent, cracked or heavily corroded, it should be replaced. Otherwise, the tire may separate from the wheel or cause a loss of handling control.

Wheel selection

When replacing wheels, care should be taken to ensure that they are equivalent to those removed in load capacity, diameter, rim width and inset*.
Replacement wheels are available at your Lexus dealer.

*: Conventionally referred to as "offset".

Lexus does not recommend using the following:

- Wheels of different sizes or types
- Used wheels
- Bent wheels that have been straightened

Aluminum wheel precautions

- Use only Lexus wheel nuts and wrenches designed for use with your aluminum wheels.
- When rotating, repairing or changing your tires, check that the wheel nuts are still tight after driving 1000 miles (1600 km).
- Be careful not to damage the aluminum wheels when using tire chains.
- Use only Lexus genuine balance weights or equivalent and a plastic or rubber hammer when balancing your wheels.

When replacing wheels

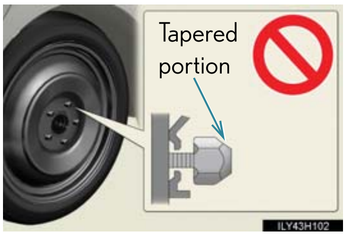
The wheels of your vehicle are equipped with tire pressure warning valves and transmitters that allow the tire pressure warning system to provide advance warning in the event of a loss in tire inflation pressure. Whenever wheels are replaced, tire pressure warning valves and transmitters must be installed. (→P. 520)

CAUTION

When replacing wheels

- Do not use wheels that are a different size from those recommended in the Owner's Manual, as this may result in a loss of handling control.
- Never use an inner tube in a leaking wheel which is designed for a tubeless tire. Doing so may result in an accident, causing death or serious injury.

When installing the wheel nuts



- Be sure to install the wheel nuts with the tapered end facing inward. Installing the nuts with the tapered end facing outward can cause wheel to break and eventually cause a wheel to come off while driving, which could lead to an accident resulting in death or serious injury.
- Never use oil or grease on the wheel bolts or wheel nuts.
  Oil and grease may cause the wheel nuts to be excessively tightened, leading to bolt or disc wheel damage. In addition, the oil or grease can cause the wheel nuts to loosen and the wheel may fall off, causing an accident and resulting in death or serious injury. Remove any oil or grease from the wheel bolts or wheel nuts.

NOTICE

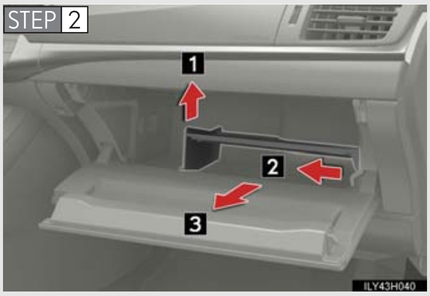
- **Replacing tire pressure warning valves and transmitters**
  - Because tire repair or replacement may affect the tire pressure warning valves and transmitters, make sure to have tires serviced by your Lexus dealer or other qualified service shop. In addition, make sure to purchase your tire pressure warning valves and transmitters at your Lexus dealer.
  - Ensure that only genuine Lexus wheels are used on your vehicle.
    Tire pressure warning valves and transmitters may not work properly with non-genuine wheels.

Air conditioning filter

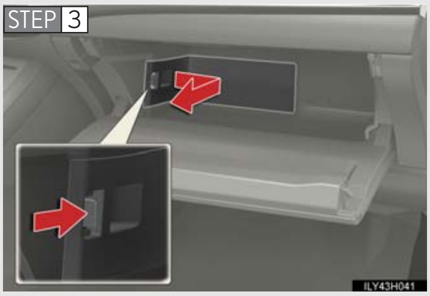
The air conditioning filter must be changed regularly to maintain air conditioning efficiency.

n Removal method

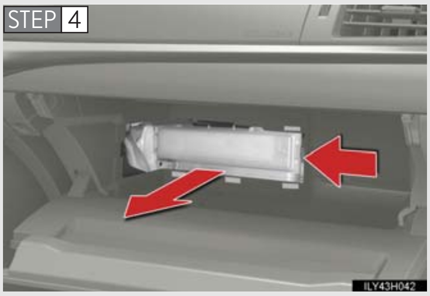
STEP 1 Turn the "POWER" switch off.

STEP 2


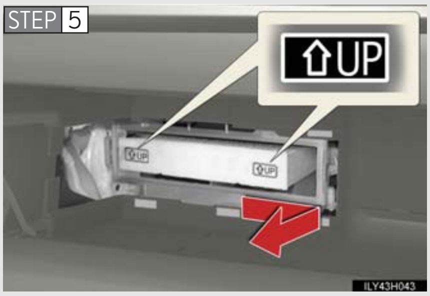
Open the glove box. Lift and remove the partition.

STEP 3


Remove the glove box cover.

STEP 4


Remove the filter cover.



Slide and pull out the filter. Replace it with a new one.

The "↑UP" marks shown on the filter should be pointing up.

■ **Checking interval**

Inspect and replace the air conditioning filter according to the maintenance schedule. In dusty areas or areas with heavy traffic flow, early replacement may be required. (For scheduled maintenance information, please refer to the "Owner's Manual Supplement" or "Scheduled Maintenance".)

■ **If air flow from the vents decreases dramatically**

The filter may be clogged. Check the filter and replace if necessary.

NOTICE

■ **When using the air conditioning system**

Make sure that a filter is always installed.
Using the air conditioning system without a filter may cause damage to the system.

Electronic key battery

Replace the battery with a new one if it is depleted.

■ You will need the following items:

- Flathead screwdriver
- Lithium battery CR1632

■ Replacing the battery

STEP 1



Take out the mechanical key.

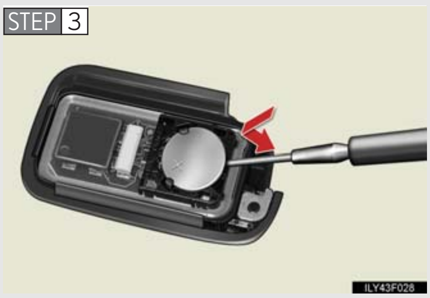
STEP 2



Remove the cover.

To prevent damage to the key, cover the tip of the screwdriver with a rag.

STEP 3



Remove the depleted battery.

Insert a new battery with the "+" terminal facing up.

Use a CR1632 lithium battery

- Batteries can be purchased at your Lexus dealer, local electrical appliance shops or camera stores.
- Replace only with the same or equivalent type recommended by the manufacturer.
- Dispose of used batteries according to local laws.

When the card key battery needs to be replaced (if equipped)

The battery for the card key is available only at Lexus dealers. Your Lexus dealer can replace the battery for you.

If the electronic key battery is depleted

The following symptoms may occur:

- The smart access system with push-button start and wireless remote control will not function properly.
- The operational range will be reduced.

CAUTION

Removed battery and other parts

Keep away from children. These parts are small and if swallowed by a child, they can cause choking. Failure to do so could result in death or serious injury.

NOTICE

For normal operation after replacing the battery

Observe the following precautions to prevent accidents:

- Always work with dry hands.
  Moisture may cause the battery to rust.
- Do not touch or move any other component inside the remote control.
- Do not bend either of the battery terminals.

Checking and replacing fuses

If any of the electrical components do not operate, a fuse may have blown. If this happens, check and replace the fuses as necessary.

STEP 1 Turn the “POWER” switch off.

STEP 2 Open the fuse box cover.

Engine compartment



Push the tab in and lift the lid off.

Left side instrument panel



Remove the lid.

STEP 3 After a system failure, see “Fuse layout and amperage ratings” (→P. 545) for details about which fuse to check.

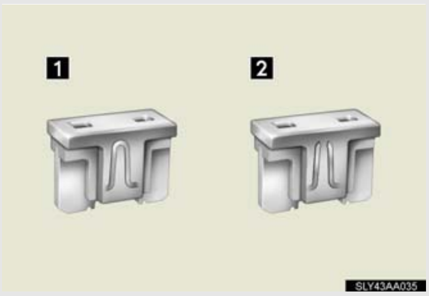
STEP 4 Remove the fuse.



Only type A fuse can be removed using the pullout tool.

STEP 5 Check if the fuse is blown.

Type A

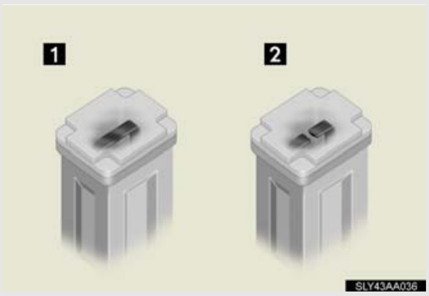


1 Normal fuse

2 Blown fuse

Replace the blown fuse with a new fuse of an appropriate amperage rating. The amperage rating can be found on the fuse box lid.

Type B

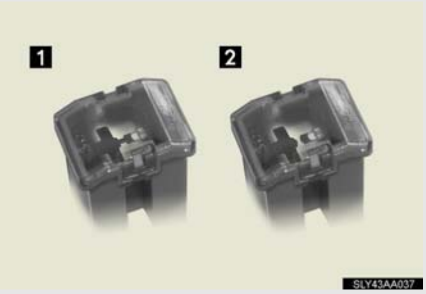


1 Normal fuse

2 Blown fuse

Replace the blown fuse with a new fuse of an appropriate amperage rating. The amperage rating can be found on the fuse box lid.

Type C

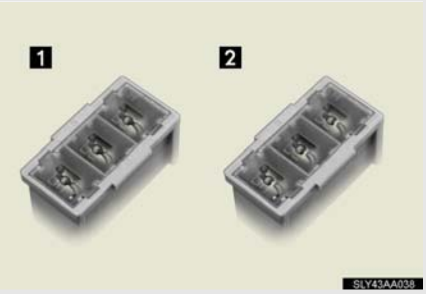


1 Normal fuse

2 Blown fuse

Replace the blown fuse with a new fuse of an appropriate amperage rating. The amperage rating can be found on the fuse box lid.

Type D



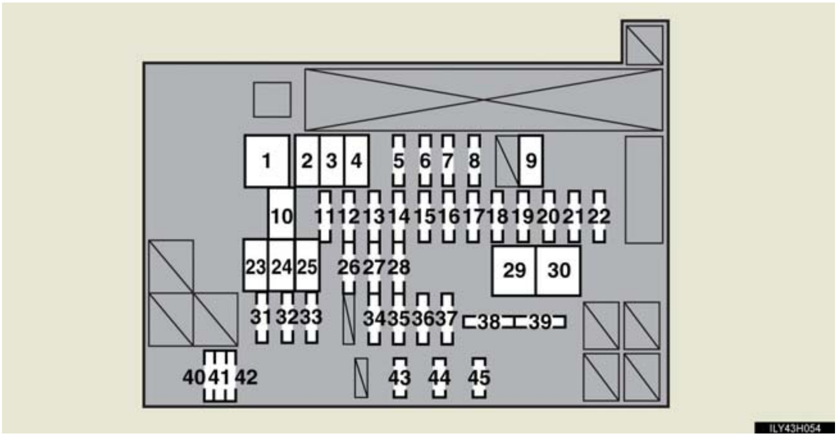
1 Normal fuse

2 Blown fuse

Replace the blown fuse with a new fuse of an appropriate amperage rating. The amperage rating can be found on the fuse box lid.

Fuse layout and amperage ratings

Engine compartment



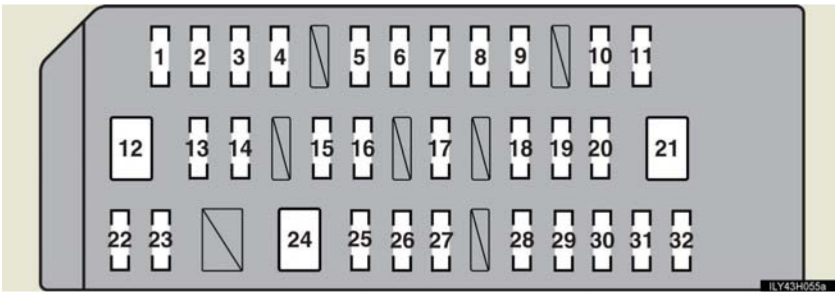
Fuse		Ampere	Circuit
1	DC/DC	125 A	Inverter and converter
2	HTR	50 A	Air conditioning system
3	RDI	30 A	Electric cooling fans
4	CDS	30 A	Electric cooling fans
5	RAD NO.1	15 A	Audio system, navigation system
6	S-HORN	10 A	Alarm, navigation system
7	ENG W/P	30 A	Cooling system
8	ABS MAIN NO.2	7.5 A	Electronically controlled brake system
9	H-LP CLN	30 A	Headlight cleaner
10	P CON MTR	30 A	P position control system

Fuse		Ampere	Circuit
11	AMP NO.2	30 A	Audio system
12	ETCS	10 A	Multiport fuel injection system/ sequential multiport fuel injection system
13	IGCT	30 A	PCU, IGCT NO.2, IGCT NO.3
14	DC/DC-S	5 A	Inverter and converter
15	P CON MAIN	7.5 A	P position control system, P position switch
16	AM2	7.5 A	Power management system
17	ECU-B2	7.5 A	Smart access system with push-button start
18	MAYDAY	10 A	Mayday
19	ECU-B3	10 A	Air conditioning system
20	TURN & HAZ	10 A	Turn signal lights, emergency flashers
21	AMP NO.1	30 A	Audio system
22	ABS MAIN NO.1	20 A	Electronically controlled brake system
23	P/I 2	40 A	P position control system, horn, headlights (low beam), back-up lights
24	ABS MTR 1	30 A	Electronically controlled brake system
25	ABS MTR 2	30 A	Electronically controlled brake system

Fuse		Ampere	Circuit
26	H-LP HI MAIN	20 A	H-LP RH HI, H-LP LH HI
27	DRL	7.5 A	Daytime running light system
28	DOOR NO.2	25 A	Power door lock system
29	P/I 1	60 A	IG2, EFI MAIN, BATT FAN
30	EPS	60 A	Electric power steering system
31	PCU	10 A	Hybrid system
32	IGCT NO.2	10 A	Hybrid system, P position control system, power management system
33	IGCT NO.3	10 A	Cooling system
34	DOME	10 A	Luggage compartment light, overhead module, interior lights, personal lights, vanity lights, footwell lights
35	ECU-B	7.5 A	Smart access system with push-button start, front passenger occupant classification system, gauges and meters, outside rear view mirrors, air conditioning system, driving position memory system, electric power steering system, clock
36	H-LP LH HI	10 A	Left-hand headlight (high beam)
37	H-LP RH HI	10 A	Right-hand headlight (high beam)

Fuse		Ampere	Circuit
38	EFI NO. 2	10 A	Multiport fuel injection system/ sequential multiport fuel injection system, exhaust system, key off pump module, electric cooling fans
39	M-HTR	10 A	Outside rear view mirror defoggers
40	SPARE	30 A	Spare fuse
41	SPARE	10 A	Spare fuse
42	SPARE	7.5 A	Spare fuse
43	EFI MAIN	20 A	Multiport fuel injection system/ sequential multiport fuel injection system, cooling system, EFI NO.2
44	BATT FAN	10 A	Battery cooling fan
45	IG2	20 A	Hybrid system, multiport fuel injection system/sequential multiport fuel injection system, MET, IGN, power management system

Left side instrument panel



Fuse		Ampere	Circuit
1	TAIL	10 A	Headlights (high beam), stop/tail lights, license plate lights, parking lights
2	PANEL	10 A	Audio system, intuitive parking assist switch, windshield wiper de-icer switch, navigation system, fuel filler door opener, glove box light, head-light cleaner switch, emergency flasher switch, air conditioning system, outside rear view mirrors, driving mode select switches, P position switch, instrument panel light control dial, shift position indicators, seat heater switches, heated steering wheel switch, pre-collision braking off switch

Fuse		Ampere	Circuit
3	IGN	10 A	Electronically controlled brake system, smart access system with push-button start, multiport fuel injection system/sequential multiport fuel injection system, stop/tail lights, SRS airbags
4	MET	7.5 A	Gauges and meters
5	WIP	30 A	Windshield wipers
6	RR WIP	20 A	Rear window wiper and washer
7	WASHER	15 A	Windshield washer
8	A/C	10 A	Air conditioning system
9	GAUGE	10 A	Windshield wiper de-icer switch, automatic headlight leveling system
10	ECU-IG NO.2	10 A	Windshield wipers, intuitive parking assist, electronically controlled brake system, navigation system, electric power steering system, turn signal lights, emergency flashers, yaw rate and G sensor, headlight cleaner, outside rear view mirrors, driving mode select switches, overhead module, pre-collision seat belts, seat heater switches, heated steering wheel switch, tire pressure warning system, dynamic radar cruise control

Fuse		Ampere	Circuit
11	ECU-IG NO.1	10 A	No circuit
12	S/ROOF	30 A	Moon roof
13	DOOR RL	25 A	Power windows
14	DOOR RR	25 A	Power windows
15	D FR DOOR	25 A	Power windows, outside rear view mirrors
16	P FR DOOR	25 A	Power windows, outside rear view mirrors
17	STOP	10 A	Stop/tail lights, electronically controlled brake system, pre-collision system
18	RR FOG	7.5 A	Stop/tail lights
19	FUEL OPEN	7.5 A	Fuel filler door opener
20	OBD	7.5 A	On-board diagnosis system
21	PWR SEAT	30 A	Power seat
22	FR FOG	15 A	Front fog lights
23	DBL LOCK	25 A	No circuit
24	PSB	30 A	Pre-collision seat belts
25	STRG HTR	10 A	Heated steering wheel
26	DOOR NO.1	25 A	Power door lock system

Fuse		Ampere	Circuit
27	SEAT HTR FL	10 A	Seat heaters
28	SEAT HTR FR	10 A	Seat heaters
29	RAD NO.2	7.5 A	Audio system, navigation system, overhead module
30	PWR OUTLET	15 A	Power outlet
31	ECU-ACC	10 A	Air conditioning system, outside rear view mirror switches
32	PWR OUTLET2	15 A	No circuit

n After a fuse is replaced

- l If the lights do not turn on even after the fuse has been replaced, a bulb may need replacement. (→P. 554)
- l If the replaced fuse blows again, have the vehicle inspected by your Lexus dealer.

n If there is an overload in a circuit

The fuses are designed to blow, protecting the wiring harness from damage.

CAUTION

- **To prevent system breakdowns and vehicle fire**

  Observe the following precautions.
  Failure to do so may cause damage, and possibly a fire or injury.

  - Never use a fuse of a higher amperage rating than that indicated, or use any other object in place of a fuse.
  - Always use a genuine Lexus fuse or equivalent.
    Never replace a fuse with a wire, even as a temporary fix.
    This can cause extensive damage or even fire.
  - Do not modify the fuses or fuse boxes.

- **Fuse box near the power control unit**

  Never check or replace the fuses as there are high voltage parts and wiring near the fuse box.
  Doing so may cause electric shock, resulting in death or serious injury.

NOTICE

- **Before replacing fuses**

  Have the cause of electrical overload determined and repaired by your Lexus dealer as soon as possible.

Light bulbs

You may replace the following bulbs by yourself. The difficulty level of replacement varies depending on the bulb. If necessary bulb replacement seems difficult to perform, contact your Lexus dealer.

For more information about replacing other light bulbs, contact your Lexus dealer.

Preparing for light bulb replacement

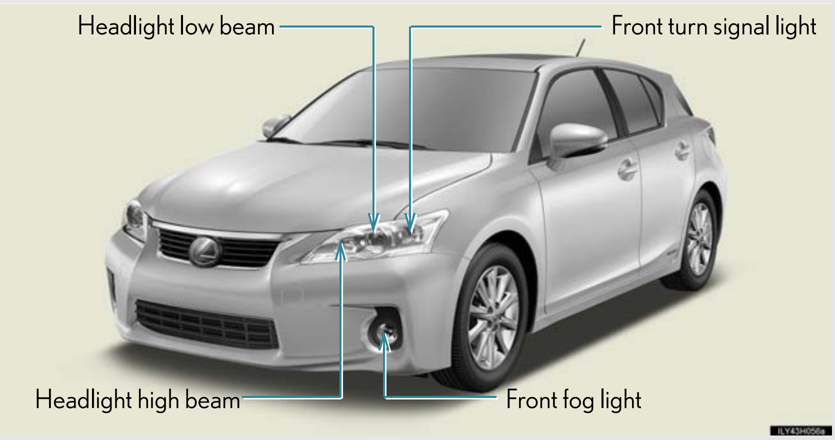
Check the wattage of the light bulb to be replaced. (→P. 664)

Removing the engine compartment covers

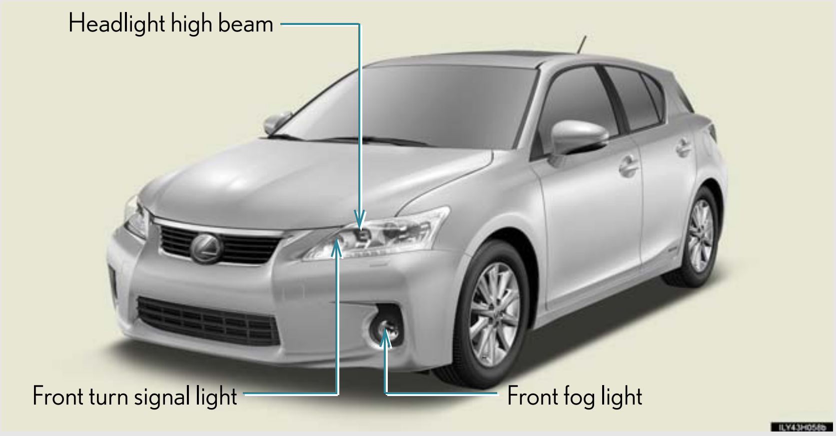
→P. 499

Front bulb locations

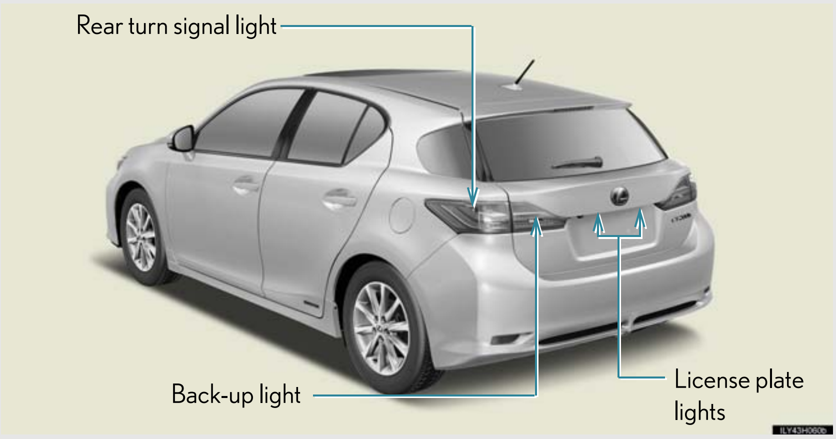
Halogen headlights



LED headlights

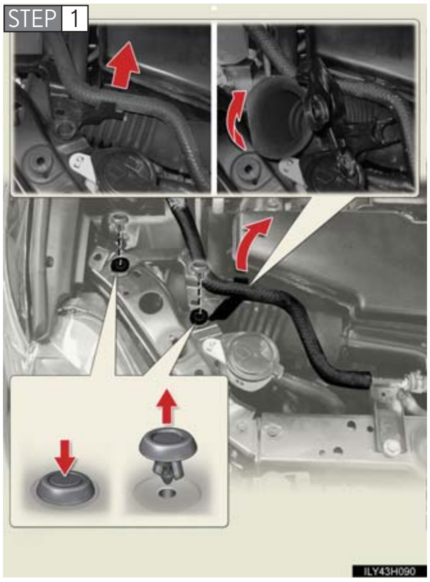


■ Rear bulb locations



Replacing light bulbs

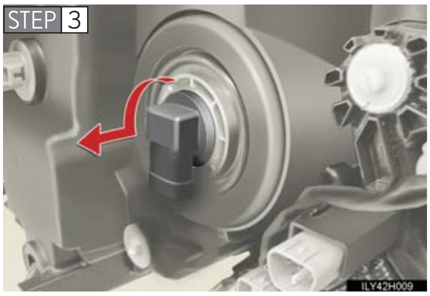
Headlight low beams (halogen headlights)



For the right side only: Remove the securing clips and unclip the engine coolant reservoir hose. Then lift up the air cleaner inlet duct.

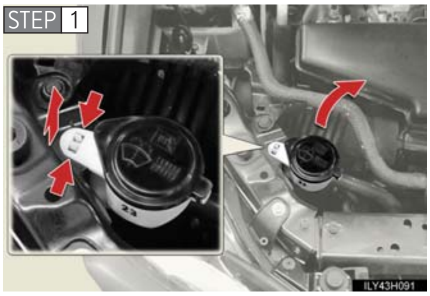


Unplug the connector while pressing the lock release.

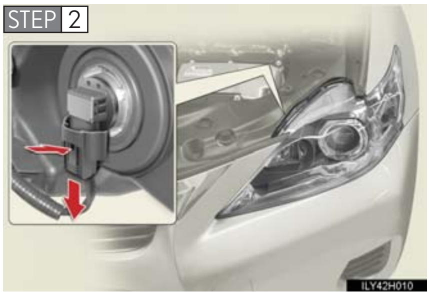


Turn the bulb base counterclockwise.

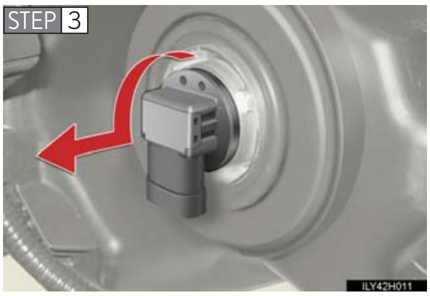
■ **Headlight high beams (halogen headlights)**



For the right side only: Move the washer fluid filler opening.



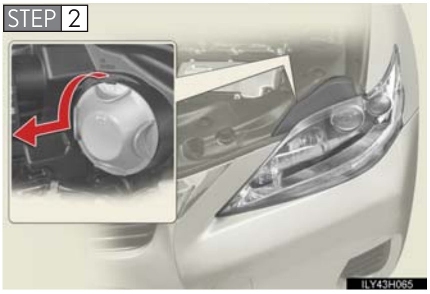
Unplug the connector while pressing the lock release.



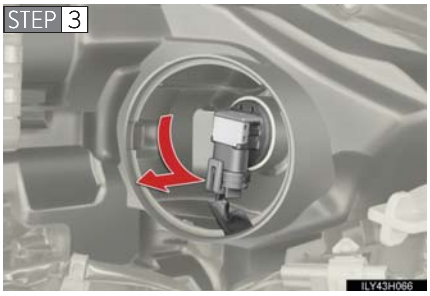
Turn the bulb base counterclockwise.

Headlight high beams (LED headlights)

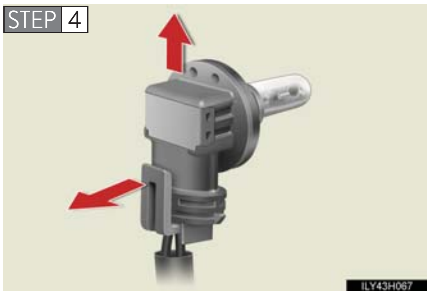
STEP 1 For the right side only: Remove the securing clips and unclip the engine coolant reservoir hose. Then lift up the air cleaner inlet duct. (→P. 556)

STEP 2


Turn the cover counterclockwise and remove it.

STEP 3


Turn the bulb base counterclockwise.

STEP 4


Unplug the connector while pulling the lock release.

■ **Front fog lights (if equipped)**

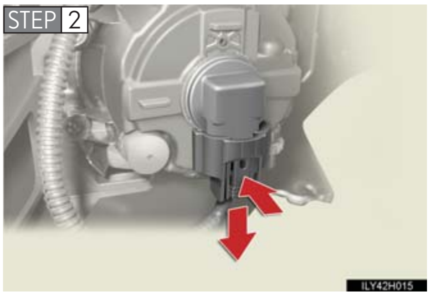
STEP 1



Remove 2 screws, a bolt and clip, and pull down the engine under cover.

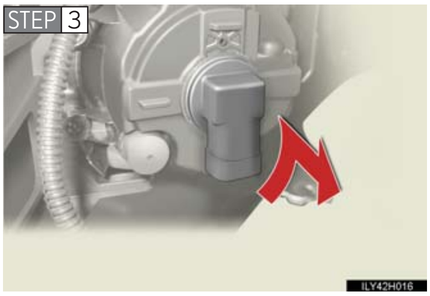
Pull the cover down slowly, being careful not to dislodge any fixed components.

STEP 2



Unplug the connector while pressing the lock release.

STEP 3

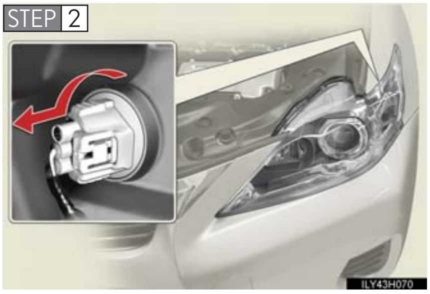


Turn the bulb base counterclockwise.

n Front turn signal lights (halogen headlights)

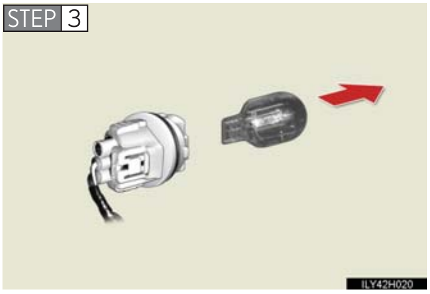
STEP 1 For the right side only: Remove the securing clips and unclip the engine coolant reservoir hose. Then lift up the air cleaner inlet duct. (→P. 556)

STEP 2



Turn the bulb base counterclockwise.

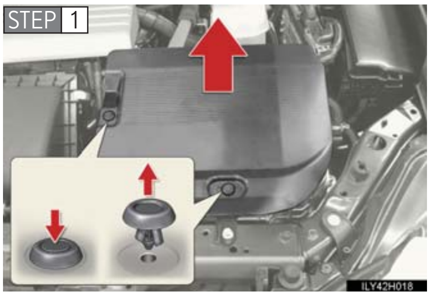
STEP 3



Remove the light bulb.

n Front turn signal lights (LED headlights)

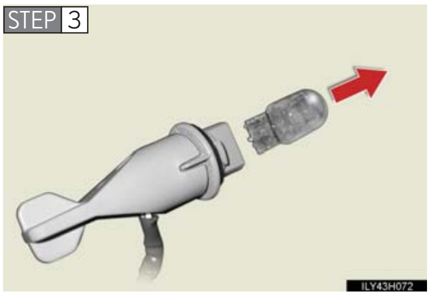
Left side



Remove the power control unit cover.



Turn the bulb base counterclockwise.



Remove the light bulb.

Right side

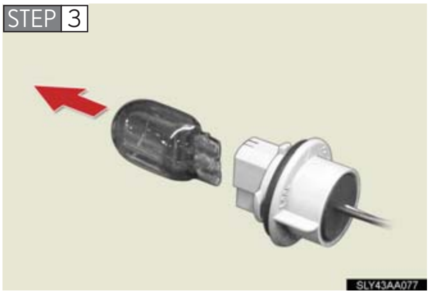
STEP 1 Move the washer fluid filler opening. (→P. 557)

STEP 2



Turn the bulb base counterclockwise.

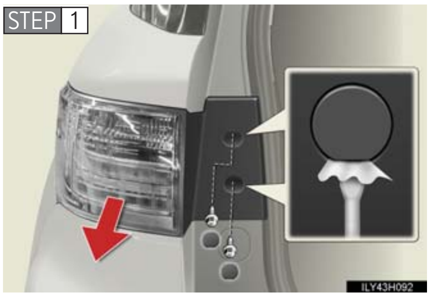
STEP 3



Remove the light bulb.

n Rear turn signal lights

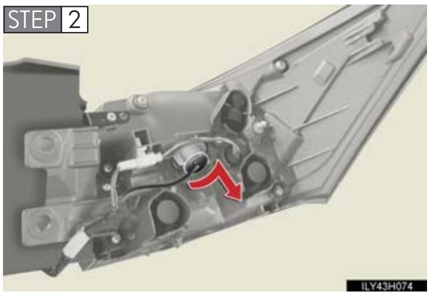
STEP 1



Open the back door and remove the covers and bolts, and remove the lamp assembly by pulling it directly backward from the rear of the vehicle.

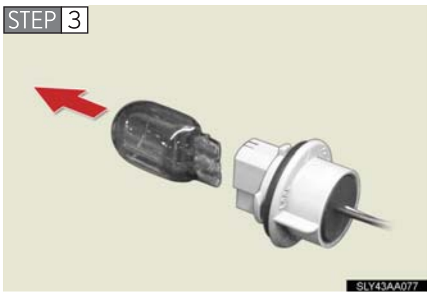
Use a flathead screwdriver wrapped in a cloth.

STEP 2



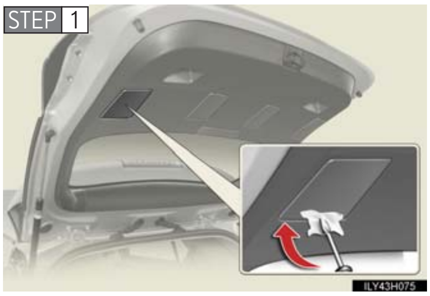
Turn the bulb base counterclockwise.

STEP 3



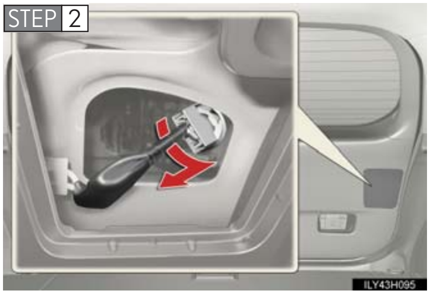
Remove the light bulb.

n **Back-up lights**

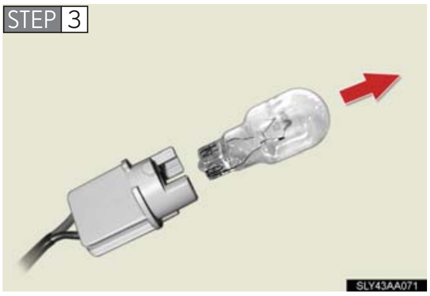


Open the back door and remove the cover.

Use a flathead screwdriver wrapped in a cloth.

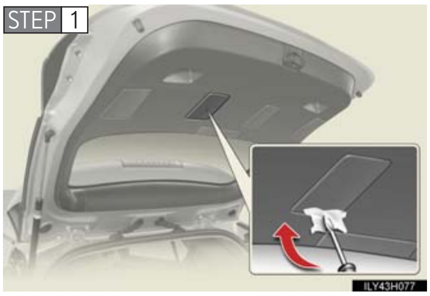


Turn the bulb base counterclockwise.



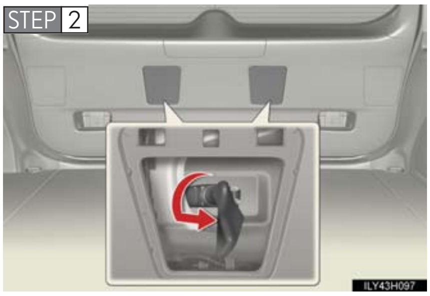
Remove the light bulb.

n License plate lights

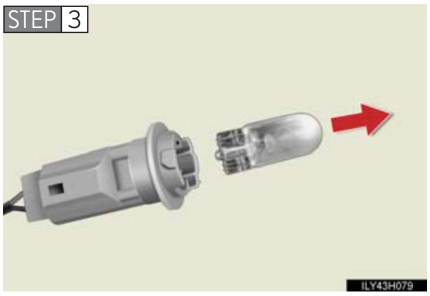


Open the back door and remove the cover.

Use a flathead screwdriver wrapped in a cloth.



Turn the bulb base counterclockwise.



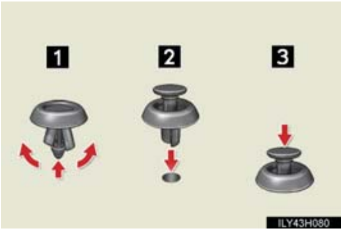
Remove the light bulb.

- **Lights other than the above**

  If any of the lights listed below has burnt out, have it replaced by your Lexus dealer.

  - Headlight low beams (LED type)
  - Parking lights and daytime running lights
  - Front side marker lights
  - Side turn signal lights
  - Stop/tail lights
  - Rear side marker lights
  - High mounted stoplight
  - Outer foot light

n **After replacing the bulbs**



After lifting up the air cleaner duct or removing the power control unit cover, return the duct or the cover to their original positions with the clips.

1 Push up center portion

2 Insert

3 Press

n **LED lights**

The headlight low beams (LED type), parking lights, front side marker lights, daytime running lights, side turn signal lights, rear side marker lights, stop/tail lights and high mounted stoplight consist of a number of LEDs. If any of the LEDs burn out, take your vehicle to your Lexus dealer to have the light replaced.

n **Condensation build-up on the inside of the lens**

Contact your Lexus dealer for more information in the following situations. Temporary condensation build-up on the inside of the headlight lens does not indicate a malfunction.

l Large drops of water have built up on the inside of the lens.

l Water has built up inside the headlight.

CAUTION

■ **Replacing light bulbs**

- Turn off the lights. Do not attempt to replace the bulb immediately after turning off the lights.
  The bulbs become very hot and may cause burns.
- Do not touch the glass portion of the light bulb with bare hands. Hold the bulb by the plastic or metal portion.
  If the bulb is scratched or dropped, it may blow out or crack.
- Fully install light bulbs and any parts used to secure them. Failure to do so may result in heat damage, fire, or water entering the headlight unit. This may damage the headlights or cause condensation to build up on the lens.

■ **To prevent damage or fire**

Make sure bulbs are fully seated and locked.